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ABSTRACT

As part of a larger investigation into workshop approach teaching, this study looked at how the workshop approach affected student creativity in project development and how the use of reflective journals impacted student project work. The workshop approach causes students to engage in metacognitive thinking during work on their class projects. Sixty-nine students from three graduate educational administration classes and two upper level educational technology classes participated in the study. In each class the student project, which used the workshop approach, constituted either 25 percent or 33 percent of the total class grade. Both qualitative and quantitative data were collected and analyzed. A questionnaire given to students at the end of the courses solicited their perceptions of the effects of the approach on their learning. Instructors photocopied sample student journal responses about the project, made their own reflective journal entries about use of the workshop technique and kept sample projects. Student perceptions of the overall use of the workshop approach relative to learning were generally positive. Investigators' observations and student comments indicated that students were thinking metacognitively. Students saw acceptance of a variety of project formats as providing an opportunity for creativity. The student questionnaire is appended. (Contains 12 references.) (JB)

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Using the Workshop Approach in University Classes to Develop Student Dispositions to Think Metacognitively and Creatively

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Many graduate and senior level classes have, as a culminating activity, some type of project or research paper in which students are expected to synthesize, articulate, and apply significant learning from the course. Usually a student is able to choose from a variety of topics, but the final "project" is generally some sort of report or term paper, often hurriedly constructed during the final days of the quarter or semester. As professors, we hope that the knowledge gained through this project or paper assignment will be meaningful to the student, and/or will reflect his or her careful, measured thought. Sometimes it is neither.

Papers and written reports have, as a major advantage, the fact that they are relatively easy to evaluate. In addition, they provide a permanent written record of the student's work. A major disadvantage of papers, however, is that they are somewhat limited in what can be expressed through them. Because they are written, they are linear. Papers are constructed from ideas written one after the other and, therefore, provide little opportunity for holistic impressions or multi-sensory expression (Marzano, Pickering, Arredondo, Blackburn, Brandy, & Moffett, 1992). Additionally, not all students are good at writing, and this fact presents the possibility (perhaps even the probability) that student knowledge will be misjudged because writing skills do not match knowledge levels.

What we know about teaching and learning indicates that students learn best when instruction requires them to use knowledge in meaningful ways (Bereiter & Scardamalia, 1985; Leinhardt, 1992). Instructional tasks that involve students in complex thinking processes such as problem solving, decision making, investigation, experimental inquiry or invention provide effective ways of engaging students in the meaningful use of knowledge, and thereby promote learning (Bransford, Vye, Kinzer, & Risko, 1990; Scardamalia,

Bereiter, McLean, Swallow, & Woodruff, 1989). The direct implication is that classes should be designed so that at least some of the instruction is more student directed than teacher directed (Marzano, 1992; Perkins, 1992). The workshop approach, described in this paper, is one way to structure university student project work assignments so that this type of instruction is provided.

Purposes of the Study

This paper and presentation describes part of a two year research effort by two professors to examine the effects of using the workshop approach as a way of involving students in complex projects requiring the meaningful use of knowledge. Courses were undergraduate and graduate courses in education, and the professors taught at different universities. Four questions guided this project:

1. How does the use of the workshop approach impact student learning?
2. How does the use of the workshop approach impact student metacognition about their learning?
3. How does the use of the workshop approach impact student creativity in project development?
4. How does the use of reflective journals impact student project work?

The focus of this paper and this presentation will be on questions 2 and 3.

The Workshop Approach

The workshop approach is well-documented within what might be called the "whole language movement" or the "writing process approach" to teaching language. Atwell (1987), Hansen (1987), and Graves (1990) have described its use in reading and writing classes across a variety of grade levels. Descriptions of its use in other content areas has been scanty, however (Marzano, 1992); and a recent literature search revealed that use of the workshop approach with college or university classes has not been reported.

The workshop approach causes students to engage in metacognitive thinking during work on their class projects (Atwell, 1987). It is this obligatory engagement in metacognition that causes the workshop approach to be so different from the more usual "term project." From the initial assignment, students are required to think rigorously about their learning. They are held accountable for decisions about the project's final shape and for the specific criteria used to evaluate their work.

The workshop approach, as incorporated into the classes during this research effort, involves four key components: reflective journals, individual student-professor conferences, structured small group discussions of project progress with peers, and presentation of the final product to the class. Each component has specific purposes. The reflective journal is used to help students stay on track with their project work, help clarify their thinking about project goals, describe their plans, record progress and problems, reflect on success and failures, develop criteria the project must meet, etc. Conferences with teams or individual students are scheduled during the term for the purpose of examining the student's metacognitive thinking about the project, help make decisions about the project, helping to solve problems, and as a way of monitoring involvement. During the individual conferences students share journal entries with the professor, report progress, difficulties, problems, and describe plans for future work. Class presentations provide opportunities for peer evaluations of student work; for more extensive exposure to content from the diversity of projects selected by other students; and for students to gain poise and confidence in oral presentations.

Study and Methods

Student project work assignments were typically introduced with broad language within the syllabi of the classes participating in this research effort. For example, student requirements included: "a project that demonstrates understanding of a significant unit of the course content," or "a project that requires synthesis of the course content and application of skills learned to develop a useful product for the student's work situation." This broad language was then made meaningful with examples of products produced by former students.

From class discussions about project expectations, students learned that they were to keep reflective journals about their project development; develop, in consultation with their professor, standards of excellence by which the project should be judged; report project progress and plans to their peers in structured small group discussions during class; and that conferences would be scheduled with their professor to discuss progress with the projects at various instances throughout the term. Approximately fifteen percent of class time was devoted to conferences and small group discussions. While the professor met with individuals, the remaining students met with their peers in structured small group sharing sessions. Individual conferences were also scheduled as needed outside of class time.

This study was conducted at two different comprehensive land grant universities during the spring terms of 1992 and 1993. Five classes, three graduate educational administrations classes and two upper level educational technology classes, with a total of 69 students, participated in the study. The upper level educational technology classes had both undergraduate and graduate students enrolled. The graduate only classes had a total of 37 students while the upper level classes had 32, 16 each term. The upper level class had 2

juniors, 9 seniors, and 5 graduate students in 1992 with 3 juniors, 4 seniors, and 9 graduate students in 1993. In each of these classes the student project, which used the workshop approach, constituted either 25 percent or 33 percent of the total class grade.

Both qualitative and quantitative data were collected and analyzed. A questionnaire consisting of 7 items rated on a 4 point scale plus 3 open ended items was given to the students at the end of the courses to obtain their perceptions of the effects of this approach on their learning.

The open ended items asked students to describe their perceptions of the strengths and weaknesses of the workshop approach as a teaching strategy, to describe the effects on their learning, and to make "other" comments. Additionally, the instructors photocopied sample student journal responses about the project; made their own reflective journal entries about use of the workshop approach during some of the classes; and kept sample projects. While questionnaire data reported in this study were collected for the Spring, 1992 and Spring, 1993 classes, both professors have used the workshop approach with some of their other classes since 1990. The student questionnaire is appended to this paper as Figure 1.

Results

Student perceptions of the overall use of the workshop approach relative to learning were generally positive. The mean response rating on the four point scale was 3.37, with a standard deviation of .62 (N = 68, Table 1, below). As expected, several distinctions were found between subgroups of students. For example, graduate students rated the use of the workshop approach more favorably than did undergraduates, with means of 3.48 and 3.06 respectively (Table 2, p. 7). The analysis of variance indicated a significant different in

means, $F(1,66) = 6.034$, $p < .0167$. Education students rated the use of the workshop approach significantly more favorably than did non-education majors with means of 3.50 and 2.85 respectively, $F(1, 66) = 14.294$, $p < .0003$ (Table 2).

Table 1

Summary of Mean student Responses on Four-point Scaled Questionnaire Items

Item	Mean	Standard Deviation
Workshop Approach	3.37	.62
Reflective Journal	2.51	.88
Instructor Conference		3.41 .67
Student Discussion	3.12	.90
Evaluation Criteria	3.10	.83
Project Formats	3.71	.55
Class Presentation	2.94	.85

Because two professors were involved in this study, teaching courses with separate content, significant differences between ratings for the overall use of the workshop approach between their classes had been anticipated. (Figure 1, Item A and Table 1, Workshop Approach, above). This was not the case. While there were significant differences between the professors on the mean ratings for components of the workshop approach, i.e., on peer discussions and project presentations, no significant differences were found between them on ratings for the overall use of the workshop approach.

Significant differences between mean ratings for the components of the workshop approach were also found among subgroups of the students involved in the study. For example, graduate students rated the class presentations of projects as having made a greater

contribution to the successful completion of their projects than did undergraduates (Table 2 below, Item B.6). (Note that each item in Table 2 has the same number on Figure 1, Student Questionnaire). Education students rated the acceptance of a variety of project formats as having made a significantly greater contribution to their success than did non-education majors (Table 2, Item B.5). The Spring 1993 students rated the contribution made by the variety of project formats significantly higher than the Spring 1992 students (Table 2, Item B.5).

Table 2

Summary of Significant Differences Between Mean Student Subgroup Ratings of Effects of the Workshop Approach on Learning

Items and Subgroups	Means	F-Test	*p*
Item A:			
Graduate/undergraduates	3.48/3.06	6.034	.0167
Education/Non-education	3.50/2.86	14.294	.0003
Spring 1992/Spring 1993	3.23/3.55	4.693	.0339
Item B.3:			
Professor A/Professor B	3.38/2.86	6.335	.0142
Item B.5:			
Education/Non-Education	3.78/3.42	4.960	.0293
Spring 1992/Spring 1993	3.56/3.90	7.008	.0101
Item B.6:			
Graduates/Undergraduates	3.12/2.37	10.881	.0016
Professor A/Professor B	3.30/2.56	15.234	.0002

The open ended responses, along with sample journal entries, were analyzed using a

constant comparative method to develop emergent themes and categories (Lincoln & Guba, 1985; Miles & Huberman, 1984). These themes and categories were developed separately by each of the investigators. Data sets were then compared for similarities and the categories collapsed to eliminate redundancy. As a result of this analysis, comments about the strengths of the workshop approach were grouped into five categories (i.e., metacognition, creative thinking, higher level thinking, collaboration, and motivation). Comments about weaknesses of the workshop approach were also grouped into five categories: clarity of expectations, time, preference for other teaching styles, motivation, and self-direction or metacognition (Item C). Comments about the effects of the workshop approach on student learning (Item D) were also categorized as negative, positive or, because of the comments, application (meaningful use of the learning). The following discussion will focus on Metacognition and Creativity. Negative comments or weaknesses of the approach will also be incorporated into the discussion. Because the data were collected anonymously, the investigators had no knowledge about gender of the respondent. Consequently, when speaking about an individual, the convention his/her and s/he will be used.

Metacognition

Self-regulation (or metacognition) has been described by Marzano et al. (1992), as a mental habit that includes the tendency to think about one's own thinking, to plan, to be aware of necessary resources, to be sensitive to feedback, and to evaluate the effectiveness of one's actions. Obviously, developing metacognition is a goal that most university professors hope to foster in their classrooms. The investigators accumulated considerable observational evidence that students were thinking metacognitively. Students wrote that the workshop

approach as a teaching strategy forced them to "take charge" of their own learning, to become more self-directed, and to function as a self-regulated learner. They reported that the reflective journal kept them on track, caused them to think about their progress toward project goals, and to continually evaluate and assess progress and plans for project completion. For example, "This approach forced the student to become the worker and allows the professor to facilitate learning rather than spoon feeding. I found myself continually rethinking my project ideas, questioning my own viewpoints, and modifying to fit the new." Students commented about the power of the requirement that they develop project criteria or standards. For example, "The evaluation criteria were very useful in guiding the development of my project. As the criteria emerged [*from individual conferences with the professor*], I became more confident that my project would be worth while. It was nice to be able to develop something that was personally fulfilling, rather than just memorize and spit it back on multiple choice tests!"

Students described increased skill at metacognition as one of the effects of the workshop approach on their learning. One student said the reflective journal had a positive impact on his/her learning, and that s/he would use it in future learning situations. Another observed, "The reflective journal was helpful, but I didn't always like writing out my thoughts. Laziness on my part!"

Responses were not uniformly positive, however. While more than seventy-five percent of the total comments were positive, there were some students who definitely did NOT like this approach as a teaching strategy. Some students seemed to prefer a more passive style of learning. One student stated that s/he didn't like this approach; that it was

all new, and s/he liked to listed to lectures and then "...just do papers for projects"; two stated that they were uncomfortable with presentations and that writing [*a term paper*] was easier. Another preferred "direct instruction" followed by multiple choice tests. One student said that s/he preferred being "...being exposed to the wisdom of the ages from the professor, rather than trying to figure things out for him/herself."

Creativity

Students saw the acceptance of a variety of project formats as providing an opportunity for creativity. They wrote about how the flexibility allowed them to use their full potential; how the "vagueness of the directions" forced them to "create"; how the freedom to choose increased their creative thinking; and how they learned in ways that matched "their individual styles." As one student observed, "I found myself reaching deeper and being more creative - and enjoying the overall process because I felt good about accompliishing something that I was proud of - something beyond a grade!"

While students valued the creative opportunity and the flexibility of the project format, the professors observed that during individual conferences, they occasionally had to reinforce important creative thinking dispositions. Creative thinking has been described by Marzano et al. (1992) as including: intense engagement in tasks - even when the answers or solutions are not readily apparent; pushing the limits of one's knowledge and abilities; generating, trusting and maintaining one's own standard for evaluation; and generating new ways of viewing a situation or problem. Using the workshop approach to manage project assignments provided an excellent strategy for student development of all these dispositions.

Again, however, there were some who did not care for this approach. One student

wrote, "I just needed more time and teacher direction to feel comfortable. I guess I'm not really a self-directed learner yet." One student seemed disappointed, "It forced me to learn more things that I didn't need to know for the class." However that same student said that "the project motivated me to do well in the class." In spite of this, student creativity seemed quite evident. Over the course of the study and since then, students have: produced videotapes, songs, puppet shows, case studies, board games, poetry, children's stories, slide shows, photo essays, a marketing strategy for an imaginary credit card company, curriculum plans for incorporating computers into specific classroom settings, curriculum implementation plans, a curriculum management plan, survey research projects, teacher workshops on conflict resolution, a student mediation project, and, of course, regular research papers. During this past term (winter, 1994), students produced: a rating system of men; setting up a dart board tournament management system; an "airplane tour" of using computers in the classroom complete with narrator and flight attendants; board games for elementary students; an inventory control system for a sporting goods store; and a plan for implementing computers into an interdisciplinary curriculum at a middle school.

General comments

The general comments students made were quite positive. Many reiterated how much they had learned and how much fun the class had been. Students wrote, "I have acquired a new attitude about education by taking this class." Another, "I am taking something of value with me as I leave." "I would like to see more university classes use this approach. I felt comfortable here. I would definitely sign up for more such classes." Another wrote, "Adults learners need the flexibility to design and to meet different goals. This was

wonderful for my self-confidence." And, finally, "Professors are the oldest educators, and therefore, usually use the oldest teaching methods. This was different. The approach gives rise to student stress -- but allows greater learning in the end."

Concluding Remarks

This investigation provided information about student and professor perceptions of the success of the workshop approach as a teaching strategy for managing project work in university classrooms. As a result of the study, the professors involved concluded that the workshop approach offers considerable potential for developing student metacognition and encouraging student creativity in the planning and execution of the final project. This approach also seems to encourage a higher level of involvement in, commitment to, and reflection on, the quality of student work - not only on the mechanics of the project itself, but on a final realization about the broader learning that must occur.

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Workshop Approach Evaluation Form
Data Collection

Objective: To evaluate the effectiveness of the workshop (or project) approach in university and college classes.

Instructions: Please rate the following items from low to high by circling 1, 2, 3, or 4. Thank you for your assistance in evaluation of this instructional format. Please note you are asked to make open-ended responses; use the back of this form if additional space is needed. Your thoughtful comments are valued and will be very helpful to us as we complete this research project.

Evaluator: Please indicate your class and major (e.g., senior-elementary education; masters-educational administration; etc.)

Low			High		
1	2	3	4	(A)	Please rate the use of the workshop/project approach to your learning.
				(B)	Please rate the relative contribution of each of the following to the successful completion of your project:
1	2	3	4	(B.1)	the reflective journal
1	2	3	4	(B.2)	conferences with your instructor
1	2	3	4	(B.3)	discussion with other students
1	2	3	4	(B.4)	development of your own project evaluation criteria
1	2	3	4	(B.5)	the acceptance of a variety of project formats by your instructor
1	2	3	4	(B.6)	presentation of your project to the class

(C) Please comment on the strengths and weaknesses of the workshop (or project) approach as a teaching strategy.

(D) Please comment as to the effect of the project approach on your learning.

(E) Other comments.

Figure 1. Student Questionnaire